

REMARKS

In the Office Action¹, the Examiner rejected claims 1-18², 21, and 22 under 35 U.S.C. § 101 as being directed to non-statutory subject matter; and rejected claims 1-22 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0071593 to Muratani ("*Muratani*") in view of U.S. Patent Application Publication No. 2002/0009208 to Alattar et al. ("*Alattar*").

By this Amendment, Applicant has amended claims 1, 10, 21, and 22. Claims 1-22 are pending and under current examination.

I. The Rejection of Claims 1-18, 21, and 22 under 35 U.S.C. § 101

Applicant respectfully traverses the rejection of claims 1-18, 21, and 22 under 35 U.S.C. § 101 as being allegedly directed to non-statutory subject matter.

Amended claims 21 and 22 recite "[a] computer readable storage medium." Thus, claims 21 and 22 positively recite programs that are tangibly stored on a computer-readable medium. Applicant notes that "a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory." MPEP § 2106(IV)(B)(1)(a). Applicant also notes that "computer

¹ The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement or characterization in the Office Action.

² The Office Action on page 5 states that claims 1-19 are rejected under 35 U.S.C. § 101 because "the body of the claims lack definite structure indicative of a physical apparatus." However, claim 19 recites a method, not an apparatus. Therefore, Applicant understands that only claims 1-18 are rejected under 35 U.S.C. § 101.

programs embodied in a tangible medium, such as floppy diskettes, are patentable subject matter under 35 U.S.C. § 101 and must be examined under 35 U.S.C. §§ 102 and 103.” In re Beauregard, 53 F.3d 1583 (Fed. Cir. 1995). Moreover, Applicant has amended the specification to clarify that the claims do not cover a propagated signal. Therefore, claims 21 and 22 constitute patentable subject matter, and Applicant submits that the rejection of claims 21 and 22 under 35 U.S.C. § 101 should be withdrawn.

Regarding claims 1-18, Applicant has amended independent claims 1 and 10 according to the Examiner’s suggestion. (Office Action at page 6). Therefore, Applicant requests that the Examiner withdraw the rejection of claims 1-18 under 35 U.S.C. § 101.

II. The Rejection of Claims 1-22 under 35 U.S.C. § 103(a)

Applicants respectfully traverse the rejection of claims 1-22 under 35 U.S.C. § 103(a). A *prima facie* case of obviousness has not been established with respect to these claims.

The key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. Such an analysis should be made explicit and cannot be premised upon mere conclusory statements. M.P.E.P. § 2142, 8th Ed., Rev. 7 (July 2008). “A conclusion of obviousness requires that the reference(s) relied upon be enabling in that it put the public in possession of the claimed invention.” M.P.E.P. § 2145. “[T]he framework for objective analysis for determining obviousness under 35 U.S.C. § 103 is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 U.S.P.Q. 459 (1966). . . . The factual inquiries . . . [include determining the scope and content of the prior art and] . . . [a]scertaining the differences between the claimed invention and the prior art.” M.P.E.P § 2141(II).

“Office personnel must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art.” M.P.E.P. § 2141(III). A *prima facie* case of obviousness has not been established because the rejections under 35 U.S.C. § 103(a) are not properly supported by a clear articulation of why the claimed invention would have been obvious.

Independent claim 1 recites a digital watermark embedding apparatus comprising, among other things, “a randomizing-function generation unit configured to generate, based on the key information, a randomizing function by mapping from a first space to a second space . . . the first space and the second space including a target space concerning embedding amounts . . . wherein the randomizing-function generation unit generates the randomizing function and computes the composite function to obtain the embedded target content being restored to the target content even if the target content is subjected to geometrical distortion after the composite function is embedded in the target content.” (emphasis added).

The Office Action concedes that *Muratani* “does not explicitly disclose mapping a first space to a second space and computing a composite function by composition of the randomizing function and the topological function, the first space and the second space including a target space concerning embedding amounts.” (Office Action at page 7). The Office Action attempts to cure this deficiency by alleging that “*Alattar* teaches . . . a randomizing-function generation unit configured to generate . . . a randomizing function by mapping from a first space to a second space.” (Office Action at page 8). This is incorrect.

Alattar relates to spread spectrum watermarking, wherein a random sequence is superimposed on content as a digital watermark. (Page 3, ¶ 0048; page 9, ¶ 0119). In contrast, claim 1 recites a digital watermark embedding apparatus that applies a topological invariant to content, divides the target space in which the topological invariant has been embedded into blocks, and replace each block with another block based on a randomizing function. *Alattar* does not disclose the claimed randomizing-function generation unit because *Alattar* does not disclose generating a randomizing function to replace each block of the target space with another block. Therefore, *Alattar* does not disclose or suggest “a randomizing-function generation unit configured to generate, based on the key information, a randomizing function by mapping from a first space to a second space . . . the first space and the second space including a target space concerning embedding amounts,” as recited in claim 1.

Furthermore, the system disclosed in *Alattar* is not generally resistant against geometric distortion. The watermarking system disclosed in *Alattar* is a known method of frequency-domain spread-spectrum watermarking that, when applied to content such as an image, exhibits resistance against geometric distortion if the distortion is small or against parallel translation or rotation of the entire image. However, the system of *Alattar* does not exhibit resistance against general geometric distortion. This is because, in the system of *Alattar*, the space in which the digital watermark information is embedded is obtained after frequency conversion, and the system is therefore only resistant against attacks when the distortion does not affect any frequency-domain component. In contrast, the target space in the claimed invention is not in the frequency domain so that the watermarking system is resistant against any geometric distortion.

That is, *Alattar* does not disclose or suggest “wherein the randomizing-function generation unit generates the randomizing function and computes the composite function to obtain the embedded target content being restored to the target content even if the target content is subjected to geometrical distortion after the composite function is embedded in the target content,” as recited in claim 1.

In view of the above, the Office Action has neither properly determined the scope and content of the prior art nor properly ascertained the differences between the prior art and the claimed invention. Accordingly, the Office Action does not clearly articulate a reason why independent claim 1 would have been obvious to one of ordinary skill in view of the art. Therefore, a *prima facie* case of obviousness has not been established and the Examiner should withdraw the rejection of independent claim 1 under 35 U.S.C. § 103(a).

Independent claims 10 and 19-22, although of different scope from claim 1 and from each other, recite elements similar to those discussed above with respect to claim 1. Accordingly, for at least the reasons discussed above with respect to claim 1, no *prima facie* case of obviousness has been established for claims 10 and 19-22. Therefore, the Examiner should withdraw the rejection of claims 10 and 19-22 under 35 U.S.C. § 103(a).

Claims 2-9 depend from claim 1 and claims 11-18 depend from claim 10, and therefore include all the elements recited therein. Accordingly, no *prima facie* case has been established with respect to claims 2-9 and 11-18 at least due to their dependence. Therefore, Applicant respectfully requests the Examiner to withdraw the rejection of claims 2-9 and 11-18 under 35 U.S.C. § 103(a)

III. Conclusion

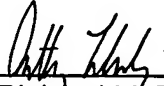
In view of the foregoing, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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